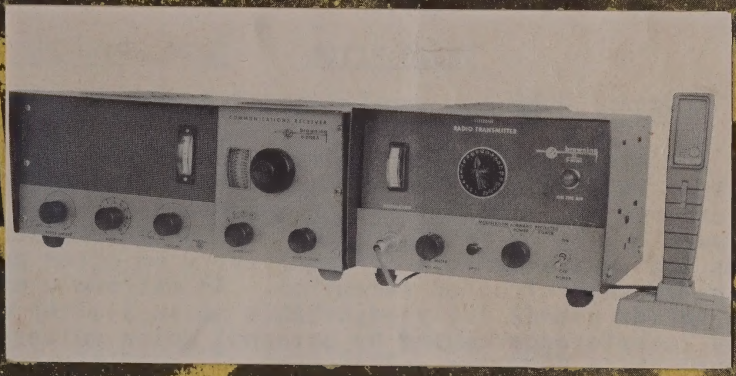
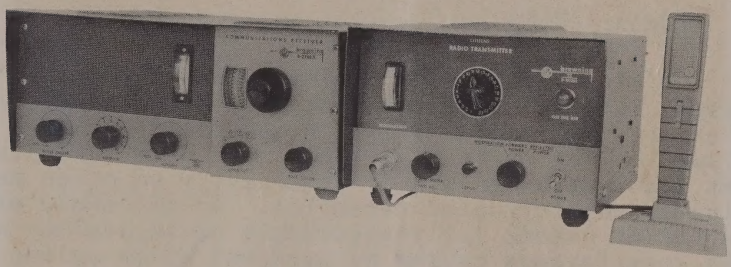
OPERATING AND SERVICE INSTRUCTIONS



BROWNING LABORATORIES, INC. LACONIA, N. H.

OPERATING AND SERVICE INSTRUCTIONS

BROWNING R-2700A COMMUNICATIONS RECEIVER



To be assured of maximum satisfaction with this highly sensitive, highly selective Citizens Band Communications Receiver, please read this manual with care. It pays to know your equipment.

BROWNING LABORATORIES, INC.

100 Union Avenue Laconia, N. H.

THE BROWNING R-2700A COMMUNICATIONS RECEIVER

This is the only Citizens Band communications receiver designed specifically and exclusively for Base Station operation.

Designed and built by radio engineers with upwards of 20 years experience in the development of famous Browning Laboratories equipment, the R-2700A Communications Receiver incorporates advanced circuitry and features never heretofore available.

Exhaustively field-tested under the most severe conditions of atmospheric and man-made interference, your R-2700A clearly receives remote, weak signals, without drifting or fading, and delivers sharp, noise-free reception from far and near on all 23 Channels of the Citizens Band.

SECTION 1

DESCRIPTION

1.1 GENERAL

The Browning R-2700A Citizens Band Communications Receiver is a deluxe radio receiver featuring superb performance and versatility. A cascode R.F. stage followed by low noise mixers and high gain I.F. stages gives that extra measure of sensitivity so often needed to insure uninterrupted reception. An extremely effective series gated, fully adjustable noise limiter minimizes interference caused by external noise pulses such as automobile ignition and atmospheric conditions. The double superhetrodyne circuitry utilizing two high Q, highly selective circuits between the first and second mixers combined with two high gain permeability tuned I. F. stages, provide the superb image rejection and selectivity that is needed to reduce interference from unwanted signals, especially interference from stations operating in adjacent channels. A crystal-controlled first oscillator and the choice of crystal or manual tuning of the second conversion oscillator with voltage regulation result in unsurpassed stability. Delayed A. V. C. provides full audio output from the weakest signals and prevents overloading by strong signals. The "S" meter can be used as a tuning aid when in the manual position and it is useful for comparing signal strength, checking antennas or adjusting mobile units.

The audio circuits incorporate a fully adjustable squelch circuit which eliminates the annoyance of noise in the absence of a signal. The rear illuminated dial calibrated in channel number and frequency quickly identifies exact frequency and channel number being received. Four watts of audio, driving a built-in speaker or an optional external speaker, assures a reserve of audio. A new feature on the R-2700A is an ANTENNA Tuner allowing you to tune the receiver to your particular antenna.

1.2 CIRCUIT

The R-2700A circuit utilizes eight tubes, some dual purpose, plus a voltage regulator. The circuit consists of a cascode radio frequency amplifier stage, a first mixer and crystal-controlled high frequency oscillator, a second mixer and crystal-controlled or self excited oscillator, two intermediate frequency stages, a diode detector, a diode A.V.C. rectifier, a series gated noise limiter, an "S" meter amplifier, first audio and squelch, audio output, voltage regulator and silicon rectifiers.

1.3 TUBE COMPLEMENT

Cascode R.F. amplifier	6BC8
First mixer	½ 12AT7
First Oscillator	½ 12AT7
Second mixer	½ 12AT7
Second oscillator	½ 12AT7
First I.F. amplifier	6BA6
Second I.F. amplifier	6BA6
Detector	1N541
A.V.C. Diode	1/3 6BV8
Series gated limiter	1/3 6BV8
"S" meter amplifier	1/3 6BV8
First audio	½ 12AX7
Squelch	½ 12AX7
Audio output	6AQ5
Voltage regulator	OB2

1.4 TUNING SYSTEM

The R-2700A has five crystal-controlled receiving positions for any five of the Citizens Band Channels 1 through 23, plus a manual tuning position with accurate calibration for all channels.

1.5 NOISE LIMITER

A well-designed series gated noise limiter is employed. This limiter is fully adjustable with an OFF position and is extremely effective for minimizing impulse type noises.

1.6 SIGNAL STRENGTH METER

An "S" meter for signal strength reading is associated with the A.V.C. circuit. The "S" meter scale is calibrated in "S" units from 1 to 9 and DB above S9.

1.7 AUDIO SQUELCH

Fully adjustable, this circuit will restore the audio from the weakest readable signal or can be set with the front panel knob to restore only on a particularly strong local signal.

1.8 CHANNEL CRYSTALS

These crystals are accessible by the removal of a small plate on the bottom side of the receiver. No tuning is required when changing channel crystals. Crystals for any of the desired channels should be ordered from Browning Laboratories, Inc., since these are specially designed for use with the R-2700 Receiver. Specify the channel number when ordering.

1.9 ANTENNA TUNER

On strong signals there will be very little apparent use for the Antenna Tuner. On weak signals tune the Antenna for maximum S-Meter readings.

SECTION 2

SIMPLIFIED OPERATING INSTRUCTIONS

Set Controls as follows:

1. Noise Limiter Off.
2. Squelch control maximum counter clockwise.
3. The channel switch to manual "M".
4. Adjust the volume control for desired volume.

Tune to the desired channel with the manual tuning knob and tune for maximum meter reading and peak with antenna tuner. After tuning, wait for signal to go off the air, then rotate the squelch control clockwise until the receiver noise disappears. When the signal returns the receiver will restore.

If the impulse noise is objectionable, turn on the limiter, clockwise, and adjust for the desired amount of noise clipping. Advancing the control too far will cause distortion of the signal. Normally, turning the limiter to the ON position will provide adequeate reduction of noise peaks.

When the channel switch is in the A, B, C, D or E position the receiver is crystal-controlled and the tuning dial is inoperative. See Fig. 1.

SECTION 3

INSTALLATION

3.1 ANTENNA REQUIREMENTS

A good quality antenna is most important. Not enough has been said about the importance of the antenna system in C. B. operation. By law the power input is limited to 4 watts, which means that the output may be anywhere from 2 to 3 3/4 watts depending upon the efficiency of the transmitter. With this small amount of power it is apparent that none should be wasted in a poor antenna system. We recommend using the best antenna obtainable. For coverage in all directions a ground plane antenna is satisfactory. For better results a co-linear antenna is recommended which will increase your signal at the receiving end by 3 or more decibels.

This is equal to doubling your input power. A 3 element beam antenna when rotated to the direction of the other station will have a gain of 6 decibels which gives the same affect as multiplying your input by 4 and a six element beam gives the affect of multiplying by 6.

It is thus very apparent that while your input power is limited much can be gained by a good antenna system. Mount your antenna as clear from surrounding objects especially wires of any kind and as high as allowed by law. Any transmission lines over 50 feet long should be RG8U.

3.2 CONNECTING THE R-2700A TO THE S-NINE OR 23/S-NINE

If your Receiver was purchased for use with the S-Nine or 23/S-Nine Transmitter you will find two interconnecting cables packed with the transmitter. One cable has an octal plug on both ends, this cable will be referred to as the "control cable". The other cable has a small RF connector on one end and a large RF connector on the other end, this cable will be referred to as the "RF cable".

Connect the control cable to the transmitter by inserting one end in the control socket on the rear of the chassis. The key on the octal plug must mate with the keyway in the large center hole of the socket. Do Not Force - be sure the key and the keyway are mated. Connect the other end of the control cable to the control socket of the R-2700 in the same manner. Both ends of the cable are the same so there is no danger of installing this cable incorrectly.

Connect the small connector end of the RF cable to the small socket on the transmitter. Connect the large connector on the other end of the RF cable to the R-2700 antenna socket.

SECTION 4

SERVICE AND TEST DATA

The Browning R-2700A is a precision communications receiver utilizing high quality components throughout and should provide dependable service for years. If trouble occurs, however, tubes should be inspected first. The cover can be removed by removing four screws, two at each end.

1. Check to see that the tubes and pilot lights light. If not, check the fuse.

2. Have tubes tested. Replace defective ones. If the tubes test "good", then proceed as follows:

3. With the volume control at full and the squelch inoperative there should be some noise from the speaker. If this noise is audible but no signals are heard, disconnect the antenna lead and with a pointed instrument touch the hot inner antenna terminal. If there is a good increase in noise pickup and if some local stations are heard, look for a short or open in the antenna lead or antenna connection.

Be sure that all external connections to the receiver, such as a relay or switch, are functioning properly before proceeding further.

Having checked the above thoroughly without locating the trouble, the following simplified method of isolating the defective stage may be employed:

Adjust the squelch control to maximum (counter clockwise) and advance the volume control.

Pull V7, the first audio stage tube, and listen for a loud click in loudspeaker. If there is a click, the output stage is functioning. If not, it is defective. Check screen and plate voltages.

Proceed with each previous stage, replacing the tube each time until a tube is pulled which causes no click in output. Check the stage after this one for voltages and continuity. This simple method of isolation will usually help to locate the trouble quickly. Do not tune transformers and coils, as the repair can usually be made without disturbing any of the alignment. Refer to the schematic for voltages.

4.1 TROUBLE-SHOOTING DATA

EQUIPMENT REQUIRED

A vacuum tube voltmeter.

A signal generator calibrated in frequency and microvolts output to cover the range of from 455 KC to 27.255 MC.

An audio oscillator tuned to 400 C.P.S.

An audio wattmeter (not essential if one is a good judge of audio level). See table below for gain measurements of a typical R-2700.

For each of these checks connect the V.T.V.M. across the diode detector load R55 and R26. The correct connection can be found by first locating C37. Since C37 is across the load, the meter can be connected between one terminal of the transformer T5 and ground.

Use a .01 MFD capacitor in series with the generator lead to prevent possible damage to the signal generator. Connect the signal generator to each of the points listed in the table and adjust the generator output for the 3 volt D.C. reference. Note how the output of the generator compares with the values in the table. Values of from one-half to twice those listed can be considered quite normal.

	Signal applied to	Freq.	Normal input
	Pin 1 of V5	455 KC	.1 volt
	Pin 1 of V4	455 KC	1400 Micro-v
*	Pin 2 of V3	455 KC	90 Micro-v
**	Pin 7 of V2	4300 KC	30 Micro-v
	Pin 1 and 8 of V1	27.085 MC	3 Micro-v
	Pin 2 of V1	27.085 MC	.8 Micro-v
	Antenna Input	27.085 MC	.3 Micro-v
	Audio		
	Pin 1 of V8	400 cycles	12.0V.
	Top of Volume	400 cycles	.25 V.

* All connections unsoldered and disconnected except R13.

** All connections unsoldered and disconnected except R7.

SECTION 5

ALIGNMENT PROCEDURE

Alignment of the R-2700A should not be attempted unless suitable equipment is available.

Before attempting alignment be sure that the tuning dial is tight on the shaft and that when the dial is rotated full clockwise the mark at the end of the scale is centered in the window marker.

SIMPLIFIED PROCEDURE

1. Connect the V.T.V.M. across the diode detector load C37, R55 and R26.

2. Apply a channel 10, 11, 12, or 13 crystal-controlled signal to the antenna input.

3. Set the channel selector switch to the corresponding channel.

4. Tune T1, top and bottom for maximum meter reading.

5. Tune top and bottom of T2, T3, T4 and T5 for maximum meter reading.

6. Repeat steps 4 and 5.

This completes the R.F. and I.F. alignment.

DIAL SCALE CALIBRATION.

1. Connect the V.T.V.M. across the diode load C37, R55 and R26.

2. Apply a Channel 1 signal from an accurate crystal-controlled signal source. Set the dial at Channel 1 and adjust C13 for maximum meter reading.

3. Set the dial at Channel 22 and apply a Channel 22 crystal-controlled signal and adjust L5 for maximum meter reading. NOTE: This adjustment will seldom need to be made. If required, it is made by adjusting a loop within the coil.

Repeat Steps #2 and #3 for exact calibration.

SECTION 6

RECOMMENDED OPERATING PROCEDURE

You will experience pleasure and satisfaction in the use of your Browning R-2700A Communications Receiver. You will hear more stations more clearly...with less interference. You will be pleased with the accurate resetability of the manual tuning dial. With the noise limiter on, you will be able to read otherwise unreadable signals.

The following suggestions will help you to enjoy the utmost satisfaction and make the best use of your Citizens Band Communications.

Whenever possible, operate in a clear channel. Listen on the R-2700A to see if the channel is clear. Have three, four or five channels available for use, so that when one is busy you can switch to another. When interference makes contact with your mobile units difficult, ask the mobile unit to switch to a less active channel. For those who are just beginning, find out what channels are most used in your area and choose those which have the least activity.

Some localities are recommending specific channels for specific purposes. For example, Channel 9 has been recommended as a national calling frequency. It has been suggested that Channel 9 be used for monitoring, as follows:

Acknowledge contact with the calling station, then switch to another channel for the communication. In this manner emergency messages can be handled. This use of the Citizens Band is useful in getting a doctor, reporting a fire or automobile accident, reporting trouble in a boat, or for innumerable other emergency uses.

CHANGING RECEIVER CRYSTALS

The crystals for the crystal-controlled receiving positions of the channel selector switch are located on the bottom of the receiver under the channel selector switch. The crystal cover is removed by removing one screw located at one end of the crystal cover. Remove the crystals one at a time by pulling on them gently. The socket nearest the front panel is position "A" on the channel selector switch, the next socket is position "B", the next "C", the next "D", and the last "E".

The following is a list of the crystal frequencies that must be used in the R-2700A for the crystal-controlled receiving function:

Channel	R-2700A Crystal Frequency
1	4890 kc
2	4880
3	4870
4	4850
5	4840
6	4830
7	4820
8	4800
9	4790
10	4780
11	4770
12	4750
13	4740
14	4730
15	4720
16	4700
17	4690
18	4680
19	4670
20	4650
21	4640
22	4630
23	4600

These crystals may be ordered from Browning Laboratories, Inc., by simply specifying channel number.

THE ULTIMATE IN CITIZENS BAND RECEPTION

You will find that your Browning R-2700A Communications Receiver provides the ultimate in Citizens Band base station equipment. This advanced unit, a dramatic improvement over the compromise transceiver, is designed effectively to broaden the range and usefulness of Citizens Band communications for you.

WARRANTY

Browning Laboratories, Inc., warrants each new inter-communicating device manufactured by it to be free from defective material and workmanship and agrees to remedy such defect or to furnish a new part in exchange for any part of any unit of its manufacture which under normal installation, use and service discloses such defect - provided the unit is delivered by the owner to us or to our authorized distributor or dealer from whom purchased within 90 days from the date of sale to original purchaser, and provided that such examination discloses in our judgment that it is thus defective.

This warranty does not extend to any of our products which have been subjected to misuse, neglect, accident, incorrect application, improper installation, or use in violation of instructions furnished by us.

This is not an all-encompassing or performance guarantee (see instructions) and this Warranty is in lieu of all other Warranties expressed or implied; and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

Browning Laboratories, Inc. reserves the right to make any change in design, or to make additions and improvements in its products without imposing any obligation on itself to install them in its products previously manufactured.

BROWNING LABORATORIES, INC.

LACONIA, N. H.

R-2700-A RECEIVER

PARTS LIST

Schematic No.	Description	Part No.
R60	Resistor ½ Watt 10% 10 ohm	27 - 1
R5, R9, R16	" " " 10% 68 "	27 - 2
R 18	" " " 10% 100 "	27 - 3
R3, R22	" " " 10% 150 "	27 - 4
R6	" " " 10% 1K	27 - 5
R14,R20,R54,R49	" " " 10% 2.2K	27 - 6
R 27	" " " 10% 3.3K	27 - 7
R 12,R59, R48	" " " 10% 4.7K	27 - 8
R 8	" " " 10% 6.8K	27 - 9
R 44	" " " 10% 10 K	27 - 10
R1, R15,R23	" " " 10% 33 K	27 - 11
R10, R11,R19	" " " 10% 47 K	27 - 12
R50	" " " 10% 68 K	27 - 13
R2,R17,R21,R36	" " " 10% 100K	27 - 14
R13, R39	" " " 10% 220K	27 - 15
R41	" " " 10% 330K	27 - 16
R4,R7,R24,25,33,37	" " " 10% 470K	27 - 17
R31	" " " 10% 820K	27 - 18
R30,R32,R34 R46,R47,R26	" " " 10% 1 meg	27 - 19
R45	" " " 10% 4.7 meg	27 - 20
R43	" " " 10% 10 meg	27 - 21
R35	" " " 10% 1.8 K	27 - 22
R38	" 1 " 10% 270 ohm	27 - 24
R40	" 2 " 10% 22 ohm	27 - 25
R42	" 1 " 10% 100 K	27 - 26
R52	" W.W.4 " 10% 250 ohm	27 - 27
R53	" " 10 " 10% 1 K	27 - 28
R51	" " 10 " 10% 10 K	27 - 29
R57	Pot. carbon ½ watt 10K	27 - 30
R58	" " " " 5 K	27 - 31
R56	" o.5 Meg w/ON-OFF SW.	27 - 32
R55	" 1 Meg w/ Reverse Sw.	27 - 33
R61	Res. W.W. 2 watt 10% 3.3 Ohm	27 - 34
C36	Cap. Mica 270 mmf	27 - 35
C15	Cap. Silver Mica 51 mmf	27 - 36
C9	Cap. Tubular Ceramic 2.2 mmf	27 - 37
C23, C53	Cap. Tubular Ceramic 5.1 mmf	27 - 38
C11	Cap. Disc. NPO 10% 15 mmf	27 - 39
C21,C22,C27, C28	Cap. Disc. Ceramic 20 mmf	27 - 40
C2	Cap. Disc Ceramic NPO 39 mmf	27 - 41
C37, C38	Cap. Silver Mica 100 mmf	27 - 42
C16,C18	Cap. Silver Mica 220 mmf	27 - 43
C8, C24	Cap. Disc. Ceramic 10 mmf	27 - 44
C17	Cap. Silver Mica 430 mmf	27 - 45
C3, C5,C7,C10, C50,C51,C52, C54,C43,C46	Cap. Disc. Ceramic .001	27 - 46
C4,C6,C12	Cap. Disc. Ceramic .002	27 - 47
C20,C25,C42	Cap. Disc. Ceramic .005	27 - 48

Schematic No.		Description	Part No.
C29, C30,C31,C32, C33,C34,C39,C47		Cap. Disc Ceramic .01	27 - 49
C45, C57		Cap. Electrolytic 4 mfd	27 - 50
C58		Cap. Electrolytic 1 mfd	27 - 51
C35,C48		Cap. Disc. Ceramic .02	27 - 53
C41,C44		Cap. Disc. Ceramic .04	27 - 54
C49,C59		Cap. Tubular 100V 0.1	27 - 55
C61		Cap. Electrolytic 40 Mfd	27 - 56
C60		Cap. Air Variable 6 mmf	27 - 57
C1		Cap. Electrolytic 450V 40-40-40	27 - 58
L6		Choke, Ferrite 2.5 MH	27 - 59
C13		Trimmer Ceramic 3-12	27 - 60
C56		Cap. N-750 10 mmf 5%	27 - 61
CR8, CR9		Rectifier, Silicon 600 P.I.V. 500 MA	27 - 62
T7		Transformer, Power A-225	27 - 63
T6	A-146	Output Transformer and speaker	27 - 64
L1		Antenna Coil A-138	27 - 65
T1	A-139	27 mc Inter Stage Transformer	27 - 66
L2	A-140	31.4 mc Oscillator Coil	27 - 67
T2	A-141	4.5 mc IF Transformer	27 - 68
L5	A-142	2nd Osc. Coil	27 - 69
T3,T4,T5		455 KC IF Transformer	27 - 70
CR8		Diode, 1N67A	27 - 71
C14	A-226	Tuning Capacitor	27 - 72
M1		S - Meter	27 - 73
		Channel Selector SW. -2-26	27 - 74
CR1		Crystal 31.4 mc	27 - 75
		Line Cord	27 - 76
		Fuse Holder	27 - 77
		Fuse 2 Amp 3 AG	27 - 78
		Dial Shaft Bushing	27 - 79
		Antenna Tuner Bracket	27 - 80
		Dial Shaft Bracket	27 - 81
		Tuning Dial	27 - 82
J4		Phone Jack w/switch	27 - 83
		Vernier Drive	27 - 84
		Speaker Bracket	27 - 85
		Chassis IF Section	27 - 86
		Chassis RF Section	27 - 87
		Bottom Plate	27 - 88
		Face Panel IF Section	27 - 89
		Front Panel Converter	27 - 90
		Top Cover	27 - 91
		Side Bracket	27 - 92
		Trim Plate	27 - 93
		Crystal Cover	27 - 94
		Channel Switch Bracket	27 - 95
		Knobs - 2 small No Scribe	27 - 96
		Knobs - Scribed 5-small	27 - 97
		Knob - 1 large	27 - 98
		Plastic Shaft 1/4" x 8"	27 - 99
		Rubber Feet	27 - 100

Schematic No.		Description	Part No.
C29, C30,C31,C32, C33,C34,C39,C47		Cap. Disc Ceramic .01	27 - 49
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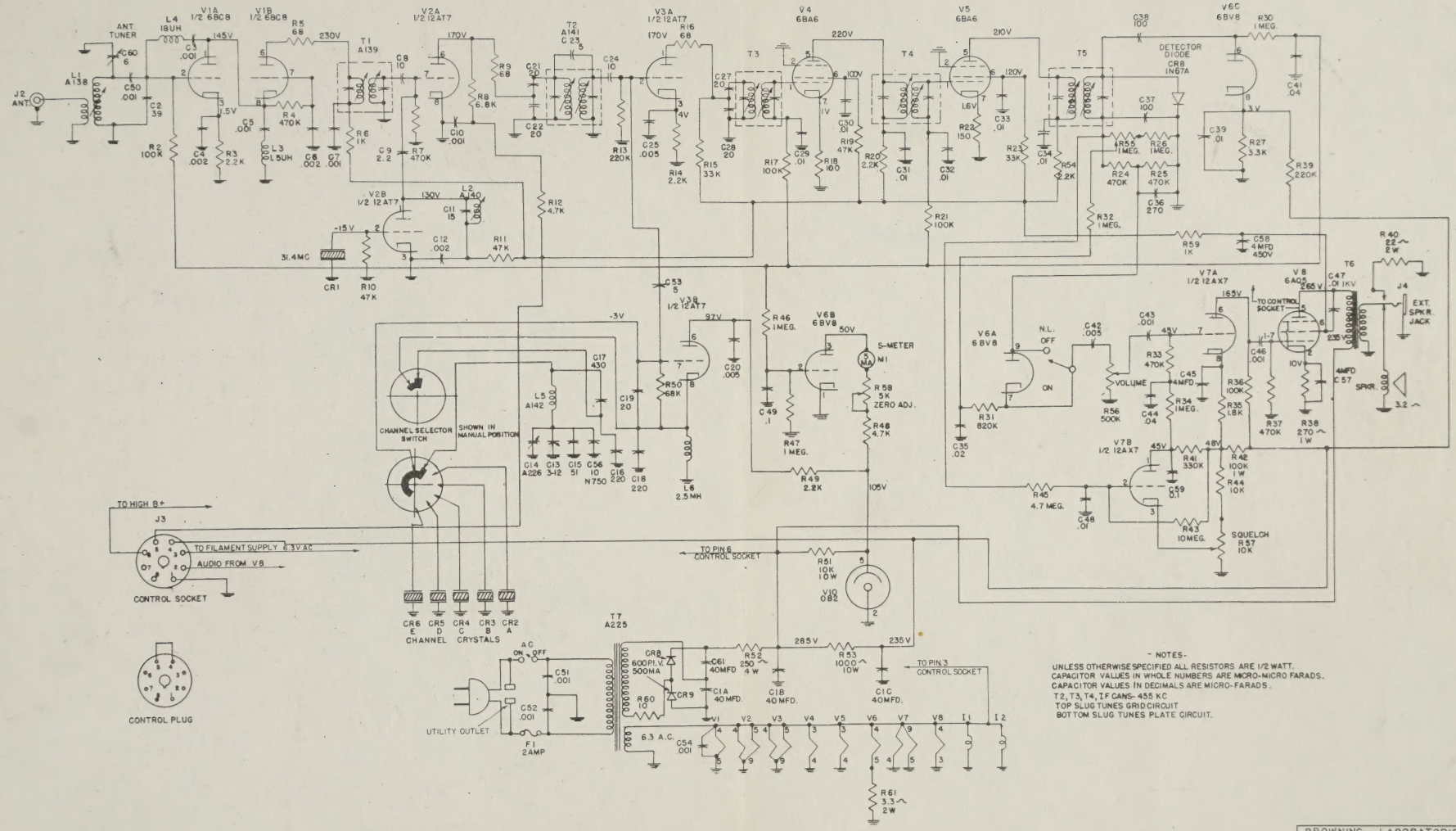
C58		Cap. Electrolytic 1 mfd	27 - 51
C35,C48		Cap. Disc. Ceramic .02	27 - 53
C41,C44		Cap. Disc. Ceramic .04	27 - 54
C49,C59		Cap. Tubular 100V 0.1	27 - 55
C61		Cap. Electrolytic 40 Mfd	27 - 56
C60		Cap. Air Variable 6 mmf	27 - 57
C1		Cap. Electrolytic 450V 40-40-40	27 - 58
L6		Choke, Ferrite 2.5 MH	27 - 59
C13		Trimmer Ceramic 3-12	27 - 60
C56		Cap. N-750 10 mmf 5%	27 - 61
CR8, CR9		Rectifier, Silicon 600 P.I.V. 500 MA	27 - 62
T7		Transformer, Power A-225	27 - 63
T6	A-146	Output Transformer and speaker	27 - 64
L1		Antenna Coil A-138	27 - 65
T1	A-139	27 mc Inter Stage Transformer	27 - 66
L2	A-140	31.4 mc Oscillator Coil	27 - 67
T2	A-141	4.5 mc IF Transformer	27 - 68
L5	A-142	2nd Osc. Coil	27 - 69
T3,T4,T5		455 KC IF Transformer	27 - 70
CR8		Diode, 1N67A	27 - 71
C14	A-226	Tuning Capacitor	27 - 72
M1		S - Meter	27 - 73
		Channel Selector SW. -2-26	27 - 74
CR1		Crystal 31.4 mc	27 - 75
		Line Cord	27 - 76
		Fuse Holder	27 - 77
		Fuse 2 Amp 3 AG	27 - 78
		Dial Shaft Bushing	27 - 79
		Antenna Tuner Bracket	27 - 80
		Dial Shaft Bracket	27 - 81
		Tuning Dial	27 - 82
J4		Phone Jack w/switch	27 - 83
		Vernier Drive	27 - 84
		Speaker Bracket	27 - 85
		Chassis IF Section	27 - 86
		Chassis RF Section	27 - 87
		Bottom Plate	27 - 88
		Face Panel IF Section	27 - 89
		Front Panel Converter	27 - 90
		Top Cover	27 - 91
		Side Bracket	27 - 92
		Trim Plate	27 - 93
		Crystal Cover	27 - 94
		Channel Switch Bracket	27 - 95
		Knobs - 2 small No Scribe	27 - 96
		Knobs - Scribed 5-small	27 - 97
		Knob - 1 large	27 - 98
		Plastic Shaft 1/4" x 8"	27 - 99
		Rubber Feet	27 - 100



- NOTES-

UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1/2 WATT.
CAPACITOR VALUES IN WHOLE NUMBERS ARE MICRO-MICRO FARADS.
CAPACITOR VALUES IN DECIMALS ARE MICRO-FARADS.
T2, T3, T4, IF CANS- 455 KC
TOP SLUG TUNES GRID CIRCUIT
BOTTOM SLUG TUNES PLATE CIRCUIT.

BROWNING LABORATORIES	
LACONIA N.H. U.S.A.	
R-2700-A SCHEMATIC	
DRAWN BY [illegible] 4-7-61	CHECKED BY [illegible]
ISSUED 11/3/61	DWG. A-2214

Schematic No.	Description	Part No.
	Meter Light Socket	27 - 101
I1, I2	Pilot Light	27 - 102
J2	Coaxial Socket SO 239	27 - 103
	Spacer (Small)	27 - 104
	Dial Mask	27 - 105
	Dial Mask Bracket	27 - 106
	Steel Spacer 1/4 Inch	27 - 107
L3	Choke 1.5 uh	27 - 108
L4	Choke 18 uh	27 - 109
	Phillips Front Pan Brass Screw (10)	27 - 110
	Dial Light Socket	27 - 111
	Crystal Socket Steatite (1)	27 - 112
	Crystal Socket Bakelite (5)	27 - 113

WARRANTY

Browning Laboratories, Inc., warrants each new intercommunicating device manufactured by it to be free from defective material and workmanship and agrees to remedy such defect or to furnish a new part in exchange for any part of any unit of its manufacture which under normal installation, use and service discloses such defect - provided the unit is delivered by the owner to us or to our authorized distributor or dealer from whom purchased within 90 days from the date of sale to original purchaser, and provided that such examination discloses in our judgment that it is thus defective.

This warranty does not extend to any of our products which have been subjected to misuse, neglect, accident, incorrect application, improper installation, or use in violation of instructions furnished by us.

This is not an all-encompassing or performance guarantee (see instructions) and this Warranty is in lieu of all other Warranties expressed or implied; and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

Browning Laboratories, Inc. reserves the right to make any change in design, or to make additions and improvements in its products without imposing any obligation on itself to install them in its products previously manufactured.

BROWNING LABORATORIES, INC.

LACONIA, N. H.

Manufacturers of --

FM-MULTIPLEX EQUIPMENT

MICROWAVE TEST INSTRUMENTS

-- KLYSTRON POWER SUPPLIES

-- SWR AMPLIFIERS

SPECIALIZED TEST INSTRUMENTS

FREQUENCY MODULATION MONITORS

WWV RECEIVERS

AMPLIFIERS

VARIOUS SPECIAL PURPOSE RECEIVERS

FM BROADCAST MONITOR & RELAY RECEIVERS

CITIZENS BAND COMMUNICATIONS RECEIVERS

AND TRANSMITTERS